

Title (en)

Composite refractory for an inner lining of a blast furnace

Title (de)

Feuerfestmaterial aus Verbundwerkstoff für die Innenverkleidung eines Hochofens

Title (fr)

Matériau réfractaire composite pour revêtement interne d'un haut-fourneau

Publication

**EP 2546215 A1 20130116 (EN)**

Application

**EP 11173453 A 20110711**

Priority

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Abstract (en)

A refractory particularly for the use in an inner lining of a blast furnace is a layered composite comprising a protective layer and a conductive layer, wherein the interlayer bonding strength between the individual layers is more than 6 MPa.

IPC 8 full level

**B32B 18/00** (2006.01); **C04B 35/52** (2006.01); **C04B 35/532** (2006.01); **C21B 7/06** (2006.01); **F27B 1/14** (2006.01); **F27D 1/00** (2006.01)

CPC (source: EP US)

**B32B 18/00** (2013.01 - EP US); **C04B 35/522** (2013.01 - EP US); **C04B 35/532** (2013.01 - EP US); **C21B 7/06** (2013.01 - EP US); **F27B 1/14** (2013.01 - EP US); **F27D 1/0006** (2013.01 - EP US); **C04B 2235/3217** (2013.01 - EP US); **C04B 2235/3232** (2013.01 - EP US); **C04B 2235/3463** (2013.01 - EP US); **C04B 2235/3804** (2013.01 - EP US); **C04B 2235/3817** (2013.01 - EP US); **C04B 2235/3852** (2013.01 - EP US); **C04B 2235/425** (2013.01 - EP US); **C04B 2235/428** (2013.01 - EP US); **C04B 2235/6587** (2013.01 - EP US); **C04B 2235/77** (2013.01 - EP US); **C04B 2235/96** (2013.01 - EP US); **C04B 2235/9607** (2013.01 - EP US); **C04B 2237/363** (2013.01 - EP US); **C04B 2237/365** (2013.01 - EP US); **C04B 2237/704** (2013.01 - EP US)

Citation (applicant)

- EP 0040440 B1 19840523
- US 2005254543 A1 20051117 - DAIMER JOHANN [DE]

Citation (search report)

- [A] JP H08259327 A 19961008 - NIPPON STEEL CORP
- [A] JP H061658 A 19940111 - NISSAN MOTOR, et al
- [A] US 2005254543 A1 20051117 - DAIMER JOHANN [DE]
- [A] EP 0040440 A2 19811125 - HOOGOVENS GROEP BV [NL]
- [A] ANDREWS K ET AL: "The Role of High Thermal Conductivity Refractories in Blast Furnace Linings", PROCEEDINGS OF THE 45TH IRONMAKING CONFERENCE., 1 January 1986 (1986-01-01), pages 163 - 173, XP009154184

Cited by

DE102013224428A1; US11155500B2; WO2020102447A1

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DOCDB simple family (publication)

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